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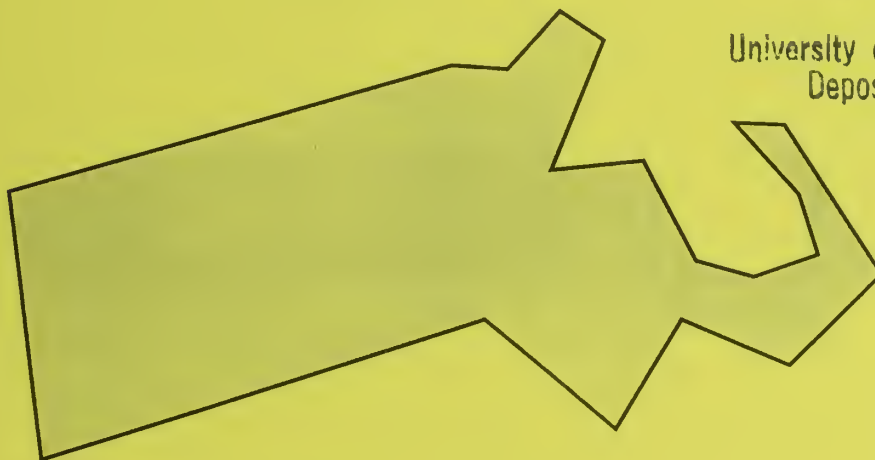
1997 Annual STD Report

Division of Sexually Transmitted Disease Prevention

GOVERNMENT DOCUMENTS
COLLECTION

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In November 1996, the Institute of Medicine (IOM) released a report entitled “**The Hidden Epidemic: Confronting Sexually Transmitted Diseases.**” The Committee’s purpose was to identify problems and solutions associated with Prevention and control of Sexually Transmitted Disease (STD) in the United States. The committee was charged to focus its study on STD other than HIV and to focus on three tasks “(1) examine the epidemiological dimensions of STD in the United States and factors that contribute to the epidemic; (2) assess the current public health strategies and programs to prevent and control STD, and (3) provide direction for future public health programs, policy, and research in STD prevention and control.”

The 1997 Annual Report will again focus on our efforts to address many of the issues and recommendations raised in the IOM report. The report identified a number of issues that should be addressed by local and state Health Departments. Improving STD surveillance and reporting systems by increasing the efficiency and sensitivity of the system. Dramatically increase the focus on Community based prevention programs. Development of prevention based behavioral change programs. Public-private partnerships involving medical providers such as Managed Care Organizations and public health agencies. STD prevention services directly focused on adolescents and young adults. Public-private partnerships involving community groups, especially so for disadvantaged minority communities.

The problems posed by community based prevention require STD programs to embrace a new paradigm in the delivery of STD services. This involves an understanding of diverse populations and viewpoints; social, behavioral, and cultural influences and patterns; and a willingness to cooperate, collaborate, and communicate. The STD Division welcomes the opportunity to become partners with interested and concerned groups and individuals to continue our progress toward making STD a problem that affects as few people as possible. Hopefully this report will convey our attempts to address many of the recommendations of the Institute of Medicine (IOM) report.

The continuing decline in reported STD in Massachusetts suggest that progress has been made in both reducing the amount of disease and in the adoption of safer sexual behaviors by some groups. Unfortunately, analysis of geographic distribution of disease indicates core transmission groups associated with substance abuse continue to contribute to high rates of STD in some cities. The STD Division hypothesizes that these declines have now reached an equilibrium point with some disease-specific increases in 1997. Further reductions in disease rates will require intensive disease intervention strategies focused on difficult-to-reach adolescents and young adults in social and economically deprived communities (inner cities) where further reductions in disease rates focus on effective promotion of health-seeking and health-promoting behaviors.

The Division of STD Prevention has five major service areas, Clinical Services, which supports specialized STD clinical services through 12 contracts and one subcontract. Laboratory Services, the diagnostic and therapeutic services of the clinics are supported by laboratory services at the State Laboratory Institute. Epidemiology, the Division field staff, disease intervention specialists (DIS), are available to any medical provider in the state. Surveillance, Reporting by the diagnosing physician is required by law. In

addition, laboratories are responsible for reporting significant lab findings. Education, The Division develops and/or provides teaching materials (films, slides, brochures, factsheets, etc. These materials are available for professional and public groups. The STD/HIV Prevention Training Center of New England, a project of the Division of STD Prevention funded by the Centers for Disease Control and Prevention (CDC).

Trends:

The statewide epidemiological trends for the past seven years continue to show decreases in incidence rates of STD with some exceptions. Reported gonorrhea in 1997, (2,077 cases) is the **lowest amount of reported gonorrhea since 1959**. Chlamydia became a reportable disease in Massachusetts in late 1985. Reported cases in 1997, (7,330) are 28% below the 1989 (10,131) peak level of reported cases but are 8% higher than the 1996 reported cases (6,791). Much of this increase is the result of increased chlamydia screening through the Division's efforts working with Family Planning Clinics.

Overall rates of **syphilis declined 64%** from 28 cases per 100,000 population in 1990, to 11 cases per 100,000 population in 1997. This is an increase from the 1996 rate of 10 cases per 100,000 population. Of greater significance is the decline of **lesion syphilis** (primary and secondary) which **declined 90%** from 11.6 cases per 100,000 population in 1990 to 1.2 cases per 100,000 population in 1997 (1.4 cases per 100,000 population in 1996), The current rate is **76% below the HEALTHY PEOPLE 2000 objective** of 5 cases per 100,000.

Gonorrhea rates declined 71% from 125 cases per 100,000 population in 1990 to 35 cases per 100,000 population in 1997, **65% below the National HEALTHY PEOPLE 2000 objective** of 100 cases per 100,000.

Chlamydia rates declined 45% from 204 cases per 100,000 population in 1990 to 122 cases per 100,000 population in 1997 falling **13% below the HEALTHY PEOPLE 2000 objective** of 140 cases per 100,000.

In Massachusetts, the risk of acquiring a sexually transmitted infection is not equally distributed across all sexually active populations. The degree of risk varies dramatically between individuals and groups depending on age, race and socioeconomic status. The large number of at-risk individuals in socio-economically deprived communities, particularly adolescents, indicates that more needs to be done to reduce the risk of acquiring STD among exposed populations.

1997 Highlights of Reported STD

1. Year to date totals 1997 compared to 1996:

* Primary and secondary syphilis decreased	18% (85 to 70)
* Early infectious syphilis decreased	29% (262 to 187)
* Congenital syphilis decreased	600% (7 to 1)
* Gonorrhea decreased	4% (2163 to 2077)
* Penicillinase Producing Gonorrhea decreased	59% (72 to 33)
* Chlamydia increased	8% (6791 to 7330)



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Table: Massachusetts Priority STD Morbidity Trends by Year
1990 - 1997

Disease	1990	1991	1992	1993	1994	1995	1996	1997
Infectious syphilis	1175	1013	700	440	278	223	262	187
Congenital syphilis	14	5	6	6	6	2	7	1
Gonorrhea	7531	5984	3580	3099	3156	2658	2163	2077
Chlamydia	12251	10891	9804	8333	8049	7402	6791	7330
PID total	702	623	504	486	468	318	204	166
Chancroid	27	2	13	2	1	7	2	4

THE ROLE OF DISEASE REPORTING

Where do the numbers come from?



State law requires physicians to report sexually transmitted diseases. Providing accurate and complete information when reporting is crucial for the validity of the data. Cases must be reported directly to the Division of STD Prevention to assure confidentiality and efficiency. The reportable infections include syphilis, gonorrhea, chlamydia, ophthalmia neonatorum, neonatal herpes, chancroid, granuloma inguinale, lymphogranuloma venereum (LGV), pelvic inflammatory disease (PID) and genital warts.

Reporting enables the Division to monitor STD trends and outbreaks, identify areas of high morbidity, focus prevention efforts to at-risk communities and assure that infected individuals are appropriately treated. In Massachusetts, the extent of under-reporting of

disease, particularly clinically diagnosed diseases such as PID, is unknown. Data suggests under-reporting is disease-specific. Laboratory surveys indicate that approximately 90% of confirmatory syphilis tests are performed by the State Laboratory Institute. Thus, syphilis case reporting is fairly complete. In contrast, an automated reporting system recently established with the major microbiology laboratory serving a health maintenance organization (HMO) increased that HMO's chlamydial reporting six-fold (the case definition for chlamydia is a positive laboratory test).

While confidentiality is a most important issue in STD surveillance, the question of data bias in the system must be addressed. The Division supports specialized STD clinics through 12 contracts with health care providers in strategically located sites throughout the state. These clinics assure access to skilled STD care in high morbidity areas in the state. These public funded clinics may lead to the assumption that socio-economically-deprived communities are covered by a more efficient surveillance system. However, the Division does not rely on clinician reporting alone. Laboratory reporting of significant findings is also accepted, thereby capturing cases unreported by clinicians. In 1997, 68% of syphilis, 72% of gonorrhea and 80% of chlamydia were reported from the private sector. Analysis of chlamydia reporting by laboratories (53%) in 1996 indicates no significant difference in reporting patterns by race/ethnicity for lab Vs provider reporting. In initially reported lab cases, race and ethnicity was unknown in 33% of reported cases. When laboratory reported cases were followed up by a report from the provider, the unknown race ethnicity category is reduced to 10%.

Calculation of Rates

All population-based rates are calculated on the basis of the 1990 national census data for Massachusetts. Using reported morbidity by age, gender, race and ethnicity when specified, rates per one hundred thousand are calculated. Data for race and ethnicity are compiled using the reported cases for which this data available. If non-specified demographic information were included and apportioned to categories according to the distribution of morbidity, absolute numbers would increase, rates would sometimes be higher, but relative differences would remain the same.

Syphilis Elimination Program

An important goal in our STD Prevention program “**Lesion Free in 2003**” is a program to eliminate infectious syphilis. One of the core elements is creating an increasingly efficient screening, treatment and follow-up program in both state prison and county correctional facilities. In 1997, the Division performed 7,994 serologic tests for syphilis for state prison inmates 8.4% of female and 4.9% of male inmates were found to have a positive screening test.

In 1997 the Division performed 17,727 serologic tests for syphilis for County Jail inmates resulting in 8.5% of female and 3.2% of male inmates were found to have a positive screening test. Our current system of screening of screening inmates allows us to affect the burden of disease at the community level while at the same preventing unnecessary treatment of false positive or previously known cases.

SYPHILIS:

Syphilis is caused by a corkscrew-shaped bacterium called *Treponema pallidum*. It does not live or cause disease outside the human body and it is spread from person to person through direct contact with an infectious lesion. The spirochetes pass through intact mucous membranes and abraded skin; they are then carried by the blood stream to every organ in the body.

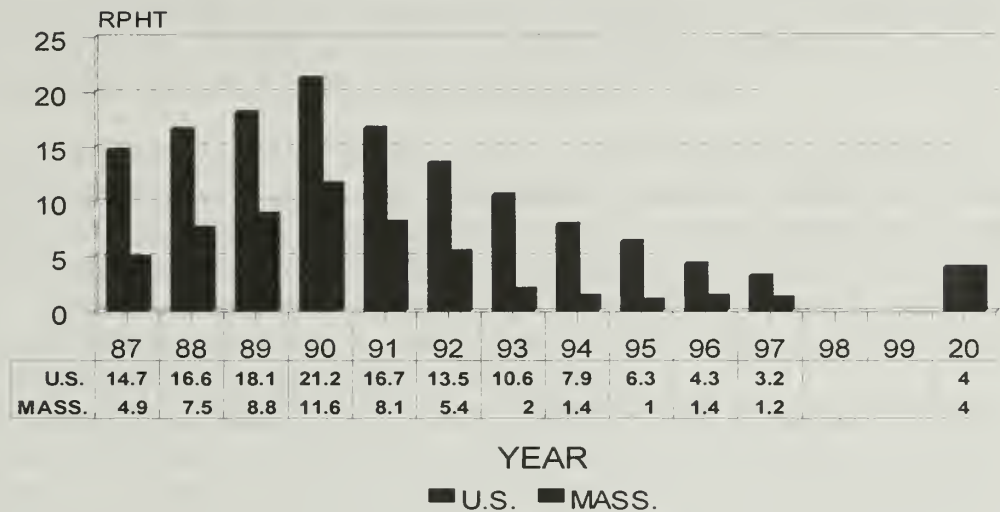
Primary syphilis is the most infectious stage of the disease. The first clinical sign is the chancre, or lesion. The lesion appears at the site of inoculation (21 days average), and is highly infectious, and the lesion resolves without treatment. Primary lesions are not confined to the genital area; they may be seen on the lips, tongue, tonsil, nipple, fingers, and anus depending on sexual practices. Without treatment, the chancre will heal completely within 1 to 5 weeks (3 weeks average). If the lesion has been present > 10 days, nearly all serologic tests will be reactive. The diagnosis of **secondary syphilis** is suspected primarily on the basis of the skin and mucous membrane lesions. The skin lesions are symmetrical and may be macular, papular, follicular, papulosquamous, or pustular. Moist papules occur most frequently in the anogenital region (condylomata lata) and the mouth. Lesions of the mouth, the throat, and the cervix (mucous patches) frequently occur in secondary syphilis, as does generalized lymphadenopathy. Symptoms of secondary syphilis may last 2 to 6 weeks (4 weeks average) and may recur in untreated or inadequately treated patients.

Latent syphilis is the stage in which no observable clinical signs or symptoms are present to suggest infection, yet the serologic tests for syphilis is reactive. All cases of syphilis are latent at some time during the course of an untreated infection. The **early** latent stage of syphilis is defined as latent disease within the first year after infection. In early syphilis, any period during which primary or secondary symptoms are absent is classified as latent. When more than a year has passed since the patient became infected and there are no signs of disease, we define this period as **late latent**. An **untreated pregnant woman** may transmit syphilis to the fetus regardless of the duration of her disease; transmission is more likely in primary, secondary, and early latent stage than in late latent. Infants born to infected untreated mothers in the secondary stage of infection are almost always infected, conversely, infants born to women with late syphilis may be uninfected. If the mother becomes infected late in the pregnancy, she may show no signs before delivery, and the infected newborn may also appear normal at birth. If a woman has untreated syphilis at delivery, it must be assumed that the infant is infected and must be treated. Adequate treatment for the mother early in pregnancy prevents infection of the fetus. In untreated **late syphilis**, signs and symptoms range from inapparent to symptoms that indicate severe damage to one or more body systems. Late syphilis, also referred to as tertiary syphilis, can be classified as neurosyphilis, cardiovascular syphilis, and late benign syphilis. About ten percent of persons with untreated syphilis develop late syphilis.

Benzathine Penicillin (Bicillin) is the recommended treatment for syphilis. A complete set of 1998 STD treatment guidelines are available through the STD Division.

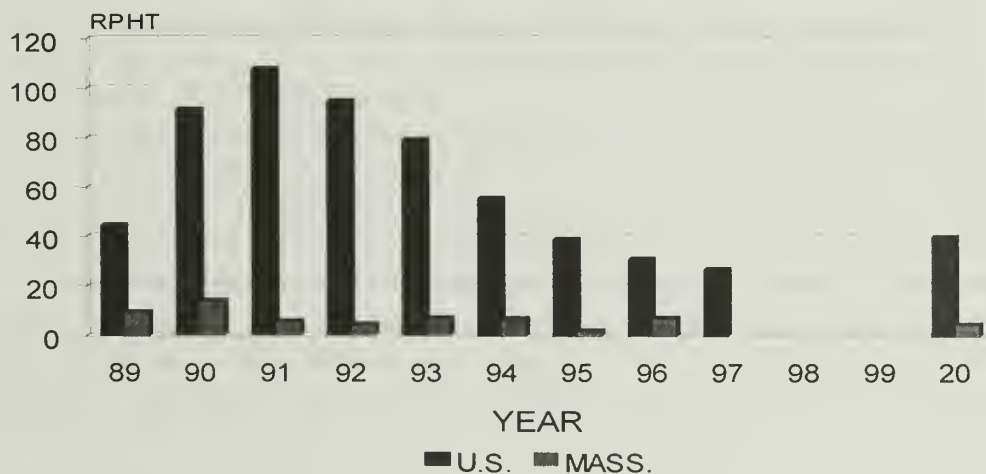
Progress towards year 2000 objectives Syphilis:

PRIMARY & SECONDARY SYPHILIS CASE RATE
HEALTHY PEOPLE 2000 OBJECTIVE revised



Advanced births for 1997 in Massachusetts are not completed therefore Congenital Syphilis rates cannot be calculated. But the number of cases are dramatically lower than 1996.

CONGENITAL SYPHILIS CASE RATE
HEALTHY PEOPLE 2000 OBJECTIVE revised



GONORRHEA

In 1996, 325,883 cases of gonorrhea were reported in the United States. In 1997 2,077 cases were reported in Massachusetts. Overall rates are somewhat higher in men and adolescents (15-19 years old) have the highest rates both nationally and in Massachusetts. A small number of states have reported an increase in Gonorrhea in late 1997 and early 1998, in young adults, the surveillance unit is monitoring this closely.

In 1879, Albert Neisser demonstrated the etiologic agent, *Neisseria gonorrhoeae*, in stained smears of urethral, vaginal, and conjunctival exudates. Most gonococcal infections remains localized at the site(s) of initial inoculation. Approximately 80 percent to 90 percent of infections remain uncomplicated when patients are treated promptly, but complications develop frequently in-patients who do not receive prompt, effective therapy. The gonococcus grows best in warm, moist, nonacid columnar or transitional epithelium (such as the urethra, cervix, rectum and pharynx).

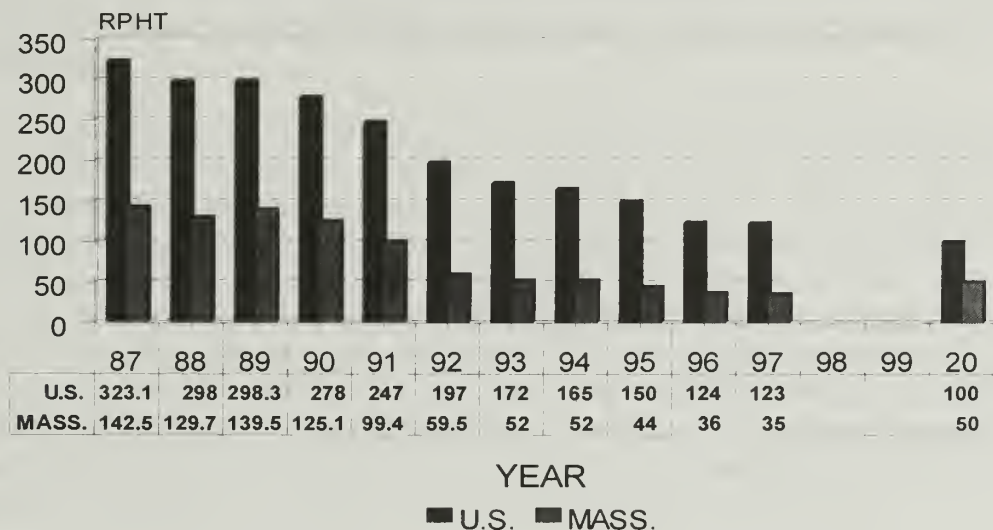
A man's risk of acquiring a urethral infection after a single episode of vaginal intercourse with an infected woman is about 20 percent, but the risk rises to 60 to 80 percent after four exposures. In women who have multiple exposures to men with gonorrheal urethritis, the prevalence of infection is 50 to 90 percent. The risk of transmission from male to female from a single exposure is higher than from female to male.

Symptoms and behavior also influence the transmission of gonorrhea. Most men and women who acquire symptomatic gonorrhea will seek treatment. Many women are asymptomatic or only mildly symptomatic and are less likely to seek treatment, which leads to complications such as pelvic inflammatory, ectopic pregnancy, infertility, or chronic pelvic pain. Because of the acute and long-term manifestations of PID, this complication has great impact on public health prevention programs. This is why it is so important to motivate all partners of gonorrhea patients to get an examination and treatment.

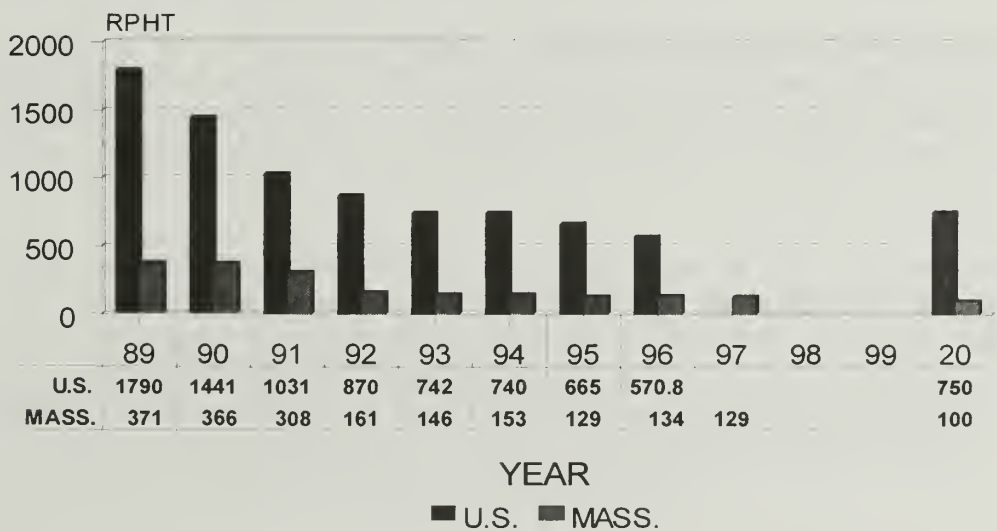
The average incubation period is 3 to 5 days, but may range from 0 to 30 days. In men, symptoms include a scanty to profuse mucopurulent discharge, usually with painful and frequent urination. The endocervical canal is the primary site of gonococcal infection in women. The incubation period is uncertain and seems more variable than in men. Most women infected with the gonococcus remain asymptomatic. Women who develop local symptoms do so within 10 days of infection. The most common symptoms in women include increased vaginal discharge, dysuria, and intermenstrual uterine bleeding. Signs and symptoms in women with gonorrhea are sometimes difficult to assess because of the prevalence of coexisting infection with *Chlamydia*, *Trichomonas*, *Candida*, *Bacterial Vaginosis*, herpes simplex, or other organisms. All women should be screened for both gonorrhea and chlamydial when infection is suspected. The symptoms of gonorrhea during pregnancy are basically the same as in nonpregnant women except that PID is less common.

Ceftriaxone is the recommended treatment for gonorrhea. A complete set of 1998 STD guidelines are available from the Division of Sexually Transmitted Disease Prevention. Progress towards year 2000 objectives Gonorrhea

GONORRHEA CASE RATE
HEALTHY PEOPLE 2000 OBJECTIVE revised



GONORRHEA CASE RATE
HEALTHY PEOPLE 2000 OBJECTIVE
15-19 YEAR OLDS



CHLAMYDIA

In 1997, 7,3301 cases of chlamydia infection were reported in Massachusetts. National data for 1997 is unavailable, however, in the United States, 490, 080 cases were reported in 1996 from 49 states.

Chlamydiae are unique microorganisms. Like viruses, chlamydiae grow only intracellularly. Unlike viruses, however, chlamydiae contain both DNA and RNA and divide by binary fission. *Chlamydia trachomatis* causes a diverse group of genital and neonatal infections.

In men, *C. trachomatis* may be responsible for 50 percent of cases of **nongonococcal urethritis** (NGU), a STD with an estimated incidence 2.5 times that of gonococcal urethritis. Chlamydia is also responsible for approximately 50 percent of the cases of acute epididymitis seen annually in the United States. Many chlamydia infections of the urethra in men are asymptomatic. The average incubation period is 7 to 21 days. In men, symptoms include a scanty mucoid to watery discharge, usually with painful and frequent urination. NGU can be diagnosed in a male patient if tests for gonorrhea are negative and if the patient has objective evidence of urethritis. The objective evidence includes a visibly abnormal discharge, pyuria defined as more than 10 **polymorphonuclear leukocytes** (PMN) per high dry field in the sediment of a first-voided urine specimen, or more than four PMN per oil immersion field in a gram-stained urethral smear.

chlamydia infections in women are even more significant. *C. trachomatis* plays an important role in causing **mucopurulent cervicitis** (MPC), acute PID, and maternal and infant infections during pregnancy and following delivery. Infection is frequently asymptomatic, which leads to complications such as pelvic inflammatory, ectopic pregnancy, infertility, and chronic pelvic pain.

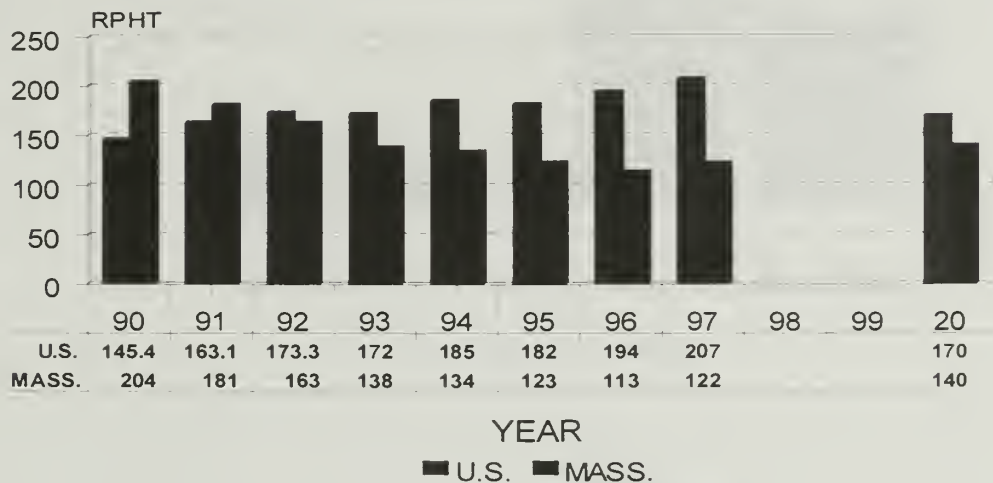
Infants whose mothers are infected can acquire a chlamydia infection at birth from contact with infected vaginal secretions. These newborns are at high risk of developing inclusion conjunctivitis and pneumonia. Chlamydia is the most common cause of neonatal eye infections and afebrile interstitial pneumonia in infants under 6 months of age.

The severe impact of sexually transmitted chlamydia infections, in both human and economic terms, has prompted increased linkages nationally between STD, family planning, and other providers to expand the availability of laboratory screening and clinical treatment services to women. This program began in the Pacific Northwest (US Public Health Service Region 10) in the late 1980's. Since then, the prevalence of chlamydia in that area has declined more than 50%. The screening program began in Massachusetts in 1996, so it is too soon to present trend information.

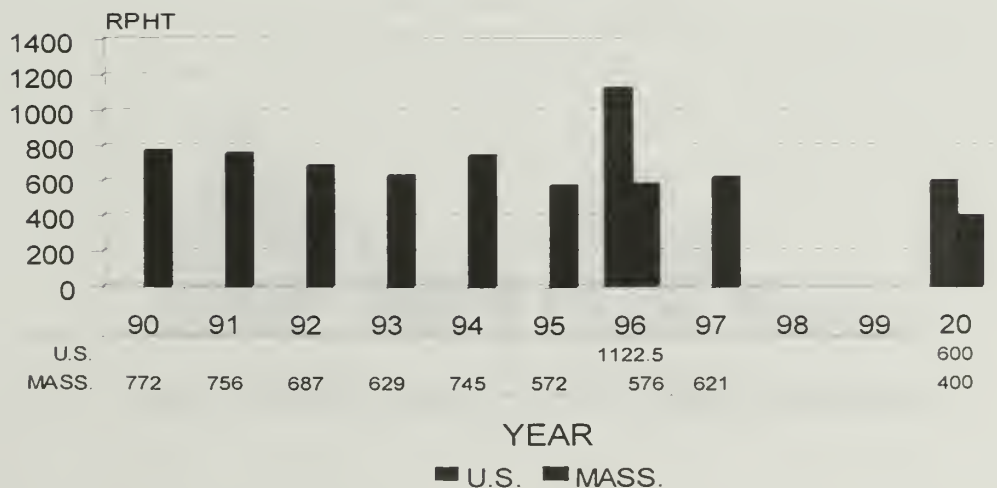
Azithromycin is the recommended treatment for chlamydia. A complete set of 1998 STD treatment guidelines are available from the Division of Sexually Transmitted Disease Prevention.

Progress towards year 2000 objectives Chlamydia

CHLAMYDIA CASE RATE
HEALTHY PEOPLE 2000 OBJECTIVE

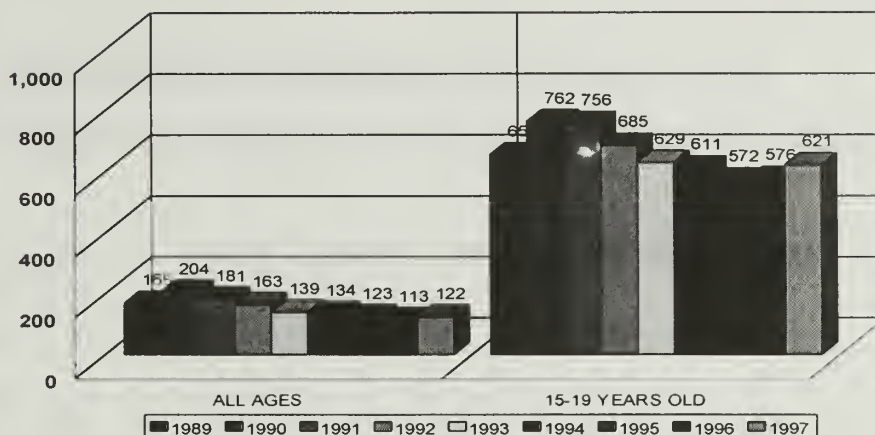


CHLAMYDIA CASE RATE AGE 15-19
HEALTHY PEOPLE 2000 OBJECTIVE

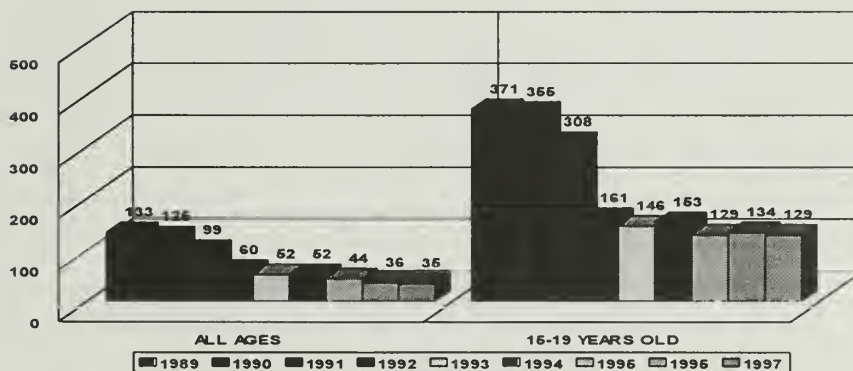


Reported STD by rate 1/100000 age,

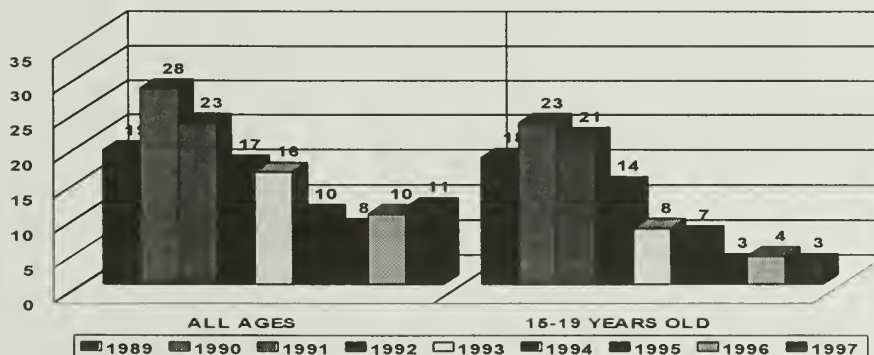
MASSACHUSETTS CHLAMYDIA



MASSACHUSETTS GONORRHEA



MASSACHUSETTS ALL SYPHILIS



Further analysis of the reported data by age, gender and race/ethnicity indicates that minority youth are at highest risk for STD. Thus community based disease prevention programs promoting and supporting safer behaviors are acutely needed for adolescents and young adults, especially so for minority communities. Public-private partnerships involving community groups, medical providers and public health agencies are essential for this to occur.

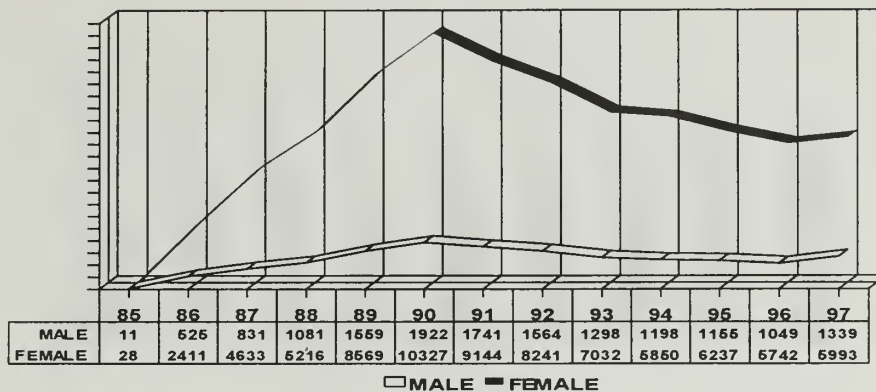
Massachusetts STD Morbidity for age: 15-19

Rate 1/100000 for reported cases by gender, race, ethnicity

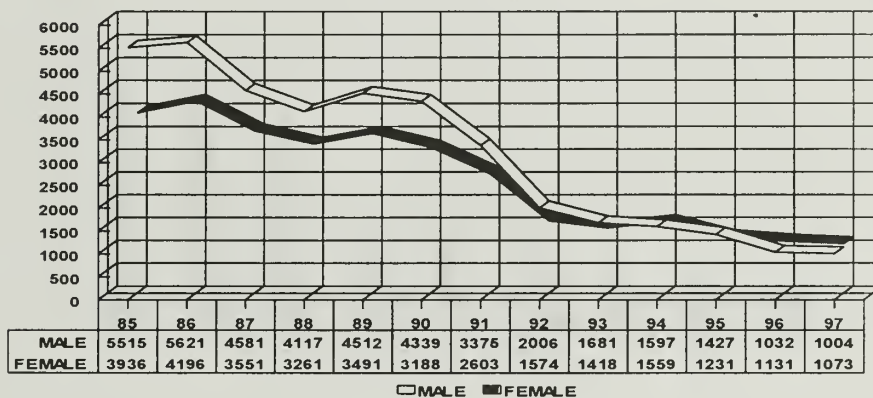
Disease	Year	White Male	Black Male	Latino Male	White Female	Black Female	Latino Female
Gonorrhea	1990	25	2779	413	70	3158	478
	1991	13	2201	373	68	2422	485
	1992	8	892	236	44	1257	323
	1993	8	721	157	55	1173	301
	1994	8	615	157	44	1403	412
	1995	8	532	164	36	1318	290
	1996	9	410	250	34	1525	500
	1997	5	509	186	38	1226	419
Chlamydia	1990	30	628	209	428	3901	2249
	1991	18	857	240	382	3710	2095
	1992	15	773	193	351	3227	2168
	1993	17	585	264	326	3771	2845
	1994	12	577	199	299	3595	3123
	1995	15	463	221	310	3725	3139
	1996	24	509	378	334	3917	3359
	1997	18	676	364	316	3679	2940
Syphilis	1990	3	121	60	4	192	191
	1991	1	99	40	2	268	118
	1992	0	89	21	4	146	59
	1993	0	8	29	2	100	37
	1994	0	53	29	1	92	22
	1995	0	8	0	0	15	51
	1996	0	23	14	3	4	7
	1997	0	15	21	1	23	29

Reported STD cases by Gender

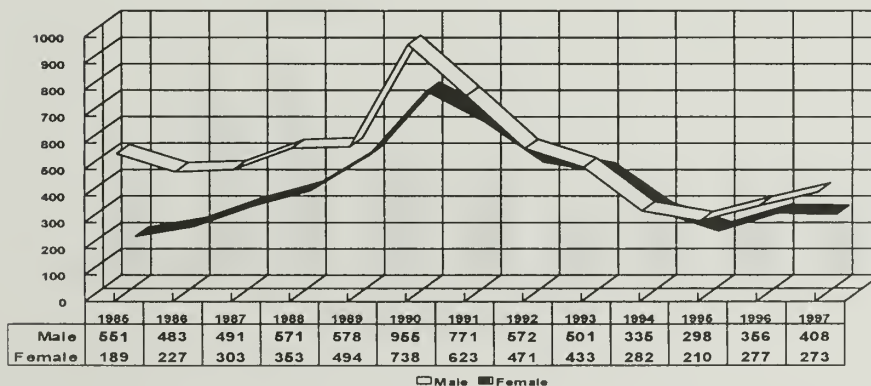
Massachusetts Chlamydia 1986-1997 Male vs. Female Reported Cases



Massachusetts Gonorrhea 1985-1997 Male vs. Female Reported Cases

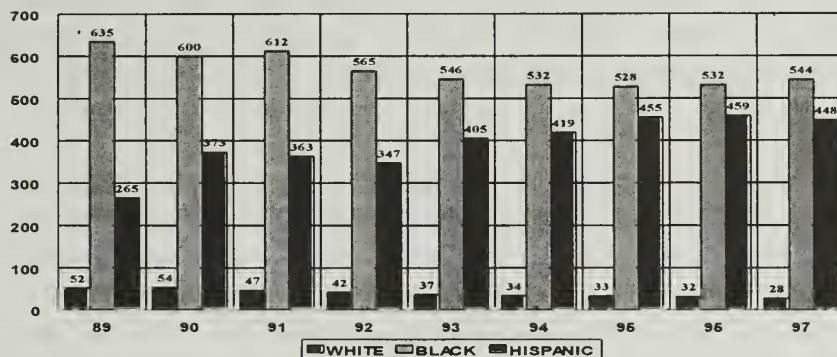


Massachusetts Syphilis 1985-1997 Male vs. Female Reported Cases

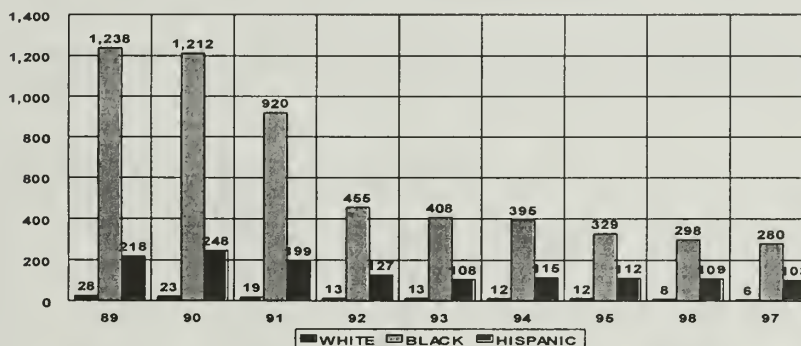


Reported STD by rate 1/10000 Race/Ethnicity

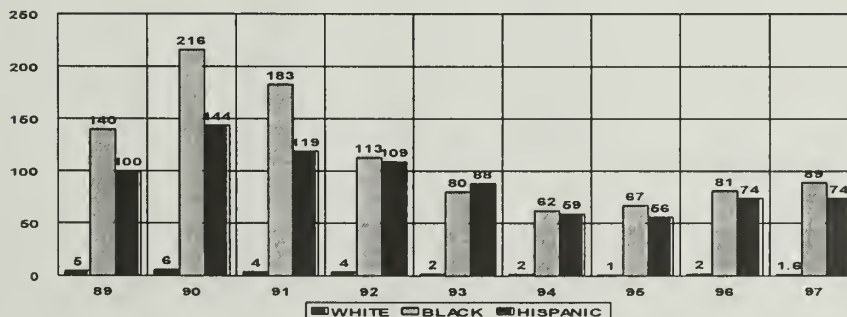
MASSACHUSETTS CHLAMYDIA BY RACE/ETHNICITY RATE PER 100,000



MASSACHUSETTS GONORRHEA BY RACE/ETHNICITY RATE PER 100,000



MASSACHUSETTS SYPHILIS BY RACE/ETHNICITY RATE PER 100,000



HISTORY OF THE DIVISION OF SEXUALLY TRANSMITTED DISEASE (STD) PREVENTION

In 1937, the Massachusetts State Legislature established a Venereal Disease (VD) Division as a branch of the Preventive Medicine Department. Its major purpose was to establish strategically located state-cooperating clinics throughout the Commonwealth, aimed specifically at STD prevention and control. The Division was created because of the recognition that complex behavioral and social factors had to be acknowledged and addressed for effective STD prevention and control.

Initially there were 23 clinics placed in hospitals and staffed by public health nurses. Through the years there have been changes in the program, primarily attributable to shifts in the morbidity and complexity of disease, client services, population and economics. In addition, the emergence of the Human Immunodeficiency Virus (HIV) has warranted an expansion of the role of the STD clinic to an STD/HIV clinic. The Division, through its contracted clinics, continues to ensure that high quality, experienced and sensitive clinical, diagnostic, treatment and prevention services are available regardless of age, race, sex, ethnicity, or ability to pay. The VD Division was renamed the Sexually Transmitted Disease (STD) Prevention Division, and placed in the Bureau of Communicable Disease Control of the Department of Public Health. The Central Offices of the Division and the Bureau are at the Massachusetts State Laboratory Institute, Jamaica Plain.

The STD Clinic contracts period ended during the year in 1997 some changes were required as a result of that process.

Clinic Visit Data, January 1 - December 31, 1997

	Total	New	Repeat				
Clinic	Visits	Visits	Visits	Males	Females	Minors	Pregnant
Baystate	2224	1620	604	1068	1162	457	21
FPCWM	1006	556	450	449	559	89	0
Berkshire	3995	825	3170	1925	2070	3096	0
BMC	3866	3354	512	2398	1468	29	15
Brockton	1451	907	544	823	628	50	4
Cambridge	151	131	20	114	37	6	0
Fenway	778	700	78	685	93	0	0
H.Q. Lynn	939	599	340	635	304	128	6
H F.H.	2315	1337	978	1049	1266	97	31
Lowell	162	96	66	104	58	5	1
MGH	5459	3150	2309	3485	1974	91	21
MCI-F.	1412	645	767	n/a	1412	16	64
N. B.	617	247	370	367	250	38	7
Saints	334	177	157	169	165	7	0
Worc. PP	1120	718	402	427	693	103	9
Total	25,829	15,062	10,767	13,692	12,137	4,212	461

STD PROGRAM SERVICE ELEMENTS

The Division of STD Control has five major service areas.

1) **Clinical Services.** The Division supports specialized STD clinical services through 12 contracts and one subcontract. The clinics (5 in hospitals; 4 in community health centers; 3 in family planning/planned parenthood clinics; and one in the women's prison in Framingham) are located throughout the state (a list is attached). The clinics offer comprehensive STD exams and testing. Each clinic also offers confidential HIV counseling and testing as a part of the service. The clinics are run by nurses. All operate on a walk-in basis, and everyone who registers will be seen at that session.

2) **Laboratory Services.** The diagnostic and therapeutic services of the clinics are supported by laboratory services at the State Laboratory Institute. The State Lab also offers selective screening and confirmatory STD testing to medical providers throughout the State. Screening of high risk populations such as new admissions to state prisons and county jails contributes to case finding and disease intervention.

STD LABORATORY TESTING

Syphilis 1995-1997			
RPR:	1995	1996	19/97
Reactive	6,702	6,108	5,713
Non-reactive	44,454	44,007	39,298
Unsatisfactory	282	431	392
Total	51,438	50,546	45,403
MHA-TP:			
Reactive	3,921	3,551	3,560
Non-reactive	2,731	2,448	2,122
Total	6,658	5,999	5,736

Gonorrhea testing 1997

	GC Isolated	Not Isolated	Unsatisfactory	Total
Total	328	9,670	314	10,322

Chlamydia testing 1997

	+ TEST	- TEST	Unsatisfactory	Total	% Pos.
Q197	55	1069	47	1171	4.9
Q297	46	1054	69	1169	4.2
Q397	73	1349	71	1493	4.9
Q497	86	1389	80	1555	5.8

3) **Epidemiology.** The Division field staff, disease intervention specialists (DIS), are available to any medical provider in the State. The DIS, with the cooperation of patient and provider, will assure treatment and interview clients diagnosed with infectious syphilis and other priority diseases (including HIV) to locate the source of the current infection, as well as those who may subsequently have been exposed. These well-trained

field epidemiologists will then try to locate each named partner and inform them (discreetly and anonymously) of their exposure, impress upon them the need for an evaluation and early intervention services for a possible infection, provide information about where such services are available, and provide focused, risk-reduction counseling to prevent future exposures. This process of eliciting the names and location of partners is based on a sense of trust that the information divulged is protected and the source(s) will never be identified. STD Division policies as well as state law protects these records from release. **Protection of confidentiality is the cornerstone of the STD Division's program.**

4) **Surveillance.** The Division utilizes two tracks of disease surveillance. Reporting by the diagnosing physician is required by law. In addition, laboratories are responsible for reporting significant lab findings to the Communicable Disease Bureau for further evaluation. These reports go directly to the Division either on a provided form or electronically. This data is compiled for epidemiologic follow-up (when necessary) by the DIS, and is also used as a measure of success of prevention initiatives. The data is used to help decide how and where resources and personnel can be most effectively used.

5) **Education.** The Division develops and/or provides teaching materials (films, slides, brochures, factsheets, etc.) which not only address STDs but other timely topics such as self-esteem and sexual negotiating skills. These materials are available for professional and public groups. We also serve as a speakers bureau, so that any group wishing to learn more about STDs (including HIV) may request a speaker for that purpose.

STD/HIV PREVENTION TRAINING CENTER OF NEW ENGLAND:

1997 CLINICAL COURSES AND SATELLITE CONFERENCES

THREE DAY STD INTENSIVE

- January 27 - 29: February 24 - 26: March 24 - 26: June 2 - 4: September 29 - October 1: October 27 - 29:

We will be adding two more three-day courses to the 1998 schedule in response to the increasing number of applicants. This will help alleviate the time between application and our ability to accommodate qualified clinicians that could benefit from the course.

FIVE DAY STD INTENSIVE

- April 2 - 3 : April 28 - 30: December 1 - 5:

BRIGHTFIELD MICROSCOPY

Wet Mounts

- February 26: April 30: June 4: October 29: December 4: 10

Stained Smears

April 30: October 29:

SYPHILIS SEROLOGY

- May 14

DARKFIELD MICROSCOPY

- November 6

ANNUAL STD UPDATE: presented jointly with the Massachusetts Medical Society

- November 20

This update for the Region I area was attended by 253 physicians and nurses. Physicians constituted a total of 30% in attendance. The majority of attendees heard of the program through direct mailing (<70%). The majority found that the quality of the update was excellent (<90%), and relevant to their practice (85%). The self-assessment following the course indicated that attendees felt an increased level of understanding of the CDC STD Treatment Guidelines, and in their ability to effectively treat STD.

NATIONAL SATELLITE CONFERENCES: Presented by National Network of STD/HIV Prevention Training Centers

- March 20: UPDATE ON VIRAL STD'S-HSV AND HPV

This satellite conference was attended by 225 clinicians from Region I, constituting 4.6% of the national attendance. National statistics indicated that more than 60% of the attendees were nurses, while only 7.5% were physicians. All of the regions showed an increased self-assessment of skills following the conference. The attendees generally indicated that the satellite conference format met their learning needs (meets needs very much = 78%), and 63% of Region I attendees responded that the quality of satellite reception was excellent. We are currently awaiting a more detailed breakdown for Region I.

- October 9: CARING FOR ADOLESCENTS WITH STD'S

This satellite conference was attended by 191 clinicians from Region I, constituting 4.2% of the national attendance. We are currently awaiting a more detailed report on demographics and evaluations of the program, nationally and for Region I.

HIV/STD: ASSOCIATION AND INTERACTION

Sexual contact is the most important mode of transmission of the human immunodeficiency virus (HIV). The association of HIV infection with other sexually transmitted diseases (STD) is obvious. Clearly, the risk behaviors which lead to STD transmission are the same which enable HIV transmission. It is appropriate to use the presence of STD's as a surrogate for HIV infection risk and such use is a valuable tool for epidemiologic and policy development purposes.

The STD/HIV connection is, however, much more than a parallel association. The interaction is more complex and insidious. STD's and HIV infection are co-facilitators. The presence of genital ulcers, discharges or erosion of mucus membrane as a manifestation of STD may be the most important single co-factor in sexual transmission of HIV in many parts of the world. The immunological impairment caused by HIV infection plays a clear role in facilitating transmission of

Other STDs, worsening manifestations and making response to therapy less successful than expected. More extensive and difficult to treat STD's cause prolonged ulcerative and inflammatory lesions, leading to wider dissemination of STD's. More extensive lesions and spread of STD's lead to more efficient transmission of HIV infection. The potential of such a vicious cycle of infection can lead to the amplification of both STD's and HIV infection in a population.

The evidence that STD's are an important facilitator of HIV transmission come from studies done in the U.S. and other parts of the world. These studies are being augmented by more and more data, which suggest that the presence of STD is an independent risk factor for HIV transmission.

A recent article in Scientific American, "Sexually Transmitted Diseases in the AIDS Era" reviews the epidemiology of STD's in the U.S. and discusses the social conditions which fuel the epidemic. The same populations which are experiencing the STD epidemic are currently disproportionately affected by HIV infection and are experiencing the most rapid increases in infection with HIV. The authors conclude that a balanced public health STD program is needed for high-risk populations and efforts to prevent and control AIDS and STD's must be coupled with the identification and correction of societal factors. It also has become clear that HIV infection and STD's are not only associated by shared risk behaviors, but are also essentially interactive risk factors. Thus, it is now generally concluded that STD genital ulcer control should be an integral part of AIDS prevention programs.

PARTNER NOTIFICATION FOR HIV

Reaching susceptible individuals, who have been exposed to disease, and then fashioning and implementing an appropriate intervention is at the very core of public health. With STDs, this effort begins with early identification of infected individuals through disease surveillance programs. Because HIV infection is not reportable in Massachusetts, early intervention must begin with the post-test counselor informing the infected person about follow-up and referral services including primary prevention and disease intervention. One intervention tool is called Partner Notification (PN), in which the sexual or needle-sharing partner is identified by the infected individual, informed of his/her exposure, and offered services to prevent, cure and manage infection. The Division of STD Prevention has been using PN as a tool to limit the number of cases of syphilis and gonorrhea for the past 50 years. We have extended this tool to HIV prevention for the past five years.

TENETS OF PARTNER NOTIFICATION

- * **PN IS ALWAYS VOLUNTARY** - No one is forced to use the service
- * **WE DO NOT NEED TO KNOW THE CLIENT'S NAME** - we only need the counselor or other health professional to assure us we are interviewing an infected person.

* **NOTIFICATION IS ALWAYS FACE-TO-FACE, IN PRIVATE** - it is not performed by mail or over the phone - this is to assure to the greatest extent possible that the person being informed is the same as the partner who was named.

* **PARTNERS ARE NOTIFIED OF POSSIBLE EXPOSURE** - not that they are infected.

* **THE SOURCE OF INFORMATION IS NEVER REVEALED OR ACKNOWLEDGED**

* **RECORDS ARE SAFEGUARDED** - no registry of HIV- infected people or their partners is kept - all paperwork is destroyed by the counselor after notification is performed.

ADVANTAGES OF PN FOR THE HIV-INFECTED PERSON

* **Empowerment** - the HIV-infected person is taking an active role in their own care and in the care of those important to him/her.

ADVANTAGES OF HIV-PN FOR PARTNERS

- * The partner(s) is informed of risks of which they may not be aware.
- * HIV-PN is an opportunity for focused, one-to-one education to those at highest risk of infection, i.e., partners of HIV-infected people, with advice on how to continue expressing their sexuality while reducing future risks of exposure and infection
- * The partner(s) is informed of risks to which they may be exposing an other partner(s)
- * The partner(s) is offered counseling/medical care/social services to help determine whether they're infected and to help cope with such news - thus, HIV-PN is a gateway to services for those at highest risk of infection.

TO OBTAIN SERVICES

* Call the Div. of STD Prevention in its central office in Boston or in any of its regional or clinic offices

Central Office: (617) 983-6940

Northeast: (978) 851-7261 X 36,37 Janice or Ada

Southeast: (508) 947-1231, X 39,43 Wanda or Brenda

Central: (508) 854-3300 X 105 (Charlotte)

Western: (413) 784-4458 (Pat or Marla)

Pittsfield: (413) 447-2654 (Jackie)

MASSACHUSETTS STD'S 1997

TOWN	COUNTY	POPULATION	SYPHILIS	RATE	GONORRHEA	RATE	CHLAMYDIA	RATE
Abington	Plymouth	13,817	*	*	*	*	<5	*
Acton	Middlesex	17,872	<5	*	*	*	<5	*
Acushnet	Bristol	9,554	<5	*	*	*	<5	*
Adams	Berkshire	9,445	*	*	<5	*	<5	*
Agawam	Hampden	27,323	*	*	<5	*	16	59
Alford	Berkshire	418	*	*	*	*	*	*
Amesbury	Essex	14,997	*	*	<5	*	14	93
Amherst	Hampshir	35,228	*	*	8	23	75	213
Andover	Essex	29,151	<5	*	<5	*	17	58
Arlington	Middlesex	44,630	*	*	<5	*	13	29
Ashburnha	Worcester	5,433	*	*	*	*	*	*
Ashby	Middlesex	2,717	*	*	*	*	*	*
Ashfield	Franklin	1,715	*	*	*	*	*	*
Ashland	Middlesex	12,066	*	*	*	*	<5	*
Athol	Worcester	11,451	*	*	<5	*	5	44
Attleboro	Bristol	38,383	<5	*	8	21	59	154
Auburn	Worcester	15,005	*	*	*	*	8	53
Avon	Norfolk	4,558	*	*	<5	*	*	*
Ayer	Middlesex	6,871	*	*	<5	*	<5	*
Barnstable	Barnstabl	40,949	<5	*	<5	*	29	71
Barre	Worcester	4,546	*	*	*	*	<5	*
Becket	Berkshire	1,481	*	*	*	*	<5	*
Bedford	Middlesex	12,996	*	*	<5	*	13	100
Belchertown	Hampshir	10,579	*	*	*	*	<5	*
Bellingham	Norfolk	14,877	*	*	*	*	7	47
Belmont	Middlesex	24,720	*	*	<5	*	7	28
Berkley	Bristol	4,237	*	*	*	*	<5	*
Berlin	Worcester	2,293	*	*	*	*	<5	*
Bernardston	Franklin	2,048	*	*	*	*	*	*
Beverly	Essex	38,195	<5	*	<5	*	25	65
Billerica	Middlesex	37,609	6	16	<5	*	14	37
Blackstone	Worcester	8,023	<5	*	*	*	8	100
Blandford	Hampden	1,187	*	*	*	*	*	*
Bolton	Worcester	3,134	*	*	<5	*	*	*
Boston	Suffolk	574,283	272	47	875	152	2,296	400
Bourne	Barnstabl	16,064	*	*	<5	*	10	62
Boxboro	Middlesex	3,343	*	*	<5	*	<5	*
Boxford	Essex	6,266	*	*	<5	*	*	*
Boylston	Worcester	3,517	*	*	*	*	5	142
Braintree	Norfolk	33,836	<5	*	<5	*	10	30
Brewster	Barnstabl	8,440	*	*	*	*	<5	*
Bridgewater	Plymouth	21,249	5	24	<5	*	17	80
Brimfield	Hampden	3,001	*	*	*	*	*	*
Brockton	Plymouth	92,788	24	26	66	71	233	251
Brookfield	Worcester	2,968	*	*	*	*	<5	*
Brookline	Norfolk	54,718	<5	*	8	15	60	110
Buckland	Franklin	1,928	*	*	*	*	*	*
Burlington	Middlesex	23,302	<5	*	*	*	8	34
Cambridge	Middlesex	95,802	19	20	23	24	196	205
Canton	Norfolk	18,530	*	*	<5	*	6	32
Carlisle	Middlesex	4,333	*	*	*	*	*	*
Carver	Plymouth	10,590	*	*	*	*	5	47
Charlemont	Franklin	1,249	*	*	*	*	*	*
Charlton	Worcester	9,576	*	*	<5	*	<5	*
Chatham	Barnstabl	6,579	*	*	*	*	<5	*
Chelmsford	Middlesex	32,383	<5	*	*	*	13	40
Chelsea	Suffolk	28,710	8	28	15	52	98	341
Cheshire	Berkshire	3,479	*	*	<5	*	<5	*
Chester	Hampden	1,280	*	*	*	*	*	*
Chesterfield	Hampshir	1,048	*	*	*	*	*	*

Chicopee	Hampden	56,632	<5	*	22	39	81	143
Chilmark	Dukes	650	*	*	*	*	*	*
Clarksburg	Berkshire	1,745	*	*	*	*	*	*
Clinton	Worcester	13,222	*	*	<5	*	10	76
Cohasset	Norfolk	7,075	*	*	*	*	*	*
Colrain	Franklin	1,757	*	*	*	*	*	*
Concord	Middlesex	17,076	9	53	<5	*	6	35
Conway	Franklin	1,529	*	*	*	*	*	*
Cummingto	Hampshir	785	*	*	*	*	<5	*
Dalton	Berkshire	7,155	*	*	*	*	<5	*
Danvers	Essex	24,174	*	*	<5	*	8	33
Dartmouth	Bristol	27,244	5	18	<5	*	12	44
Dedham	Norfolk	23,782	<5	*	<5	*	9	38
Deerfield	Franklin	5,018	*	*	<5	*	*	*
Dennis	Barnstabl	13,864	*	*	*	*	<5	*
Dighton	Bristol	5,631	*	*	*	*	<5	*
Douglas	Worcester	5,438	*	*	*	*	<5	*
Dover	Norfolk	4,915	*	*	*	*	*	*
Dracut	Middlesex	25,594	*	*	<5	*	11	43
Dudley	Worcester	9,540	*	*	<5	*	9	94
Dunstable	Middlesex	2,236	*	*	<5	*	*	*
Duxbury	Plymouth	13,895	*	*	*	*	<5	*
East Bridge	Plymouth	11,104	*	*	*	*	<5	*
East Brookfi	Worcester	2,033	*	*	*	*	<5	*
East Longm	Hampden	13,367	*	*	<5	*	<5	*
Eastham	Barnstabl	4,462	*	*	*	*	*	*
Easthampto	Hampshir	15,537	*	*	*	*	<5	*
Easton	Bristol	19,807	*	*	<5	*	<5	*
Edgartown	Dukes	3,062	*	*	*	*	*	*
Egremont	Berkshire	1,229	*	*	*	*	*	*
Erving	Franklin	1,372	*	*	*	*	*	*
Essex	Essex	3,260	*	*	*	*	*	*
Everett	Middlesex	35,701	<5	*	9	25	33	92
Fairhaven	Bristol	16,132	*	*	<5	*	9	56
Fall River	Bristol	92,703	6	6	7	8	74	80
Falmouth	Barnstabl	27,960	*	*	<5	*	29	104
Fitchburg	Worcester	41,194	5	12	6	15	94	228
Florida	Berkshire	742	*	*	*	*	*	*
Foxboro	Norfolk	14,637	*	*	<5	*	<5	*
Framingha	Middlesex	64,989	7	11	14	22	44	68
Franklin	Norfolk	22,095	*	*	*	*	*	*
Freetown	Bristol	8,522	*	*	*	*	<5	*
Gardner	Worcester	20,125	<5	*	*	*	14	70
Gay Head	Dukes	201	*	*	*	*	*	*
Georgetown	Essex	6,384	*	*	<5	*	<5	*
Gill	Franklin	1,583	*	*	*	*	*	*
Gloucester	Essex	28,716	*	*	*	*	8	28
Goshen	Hampshir	830	*	*	*	*	*	*
Gosnold	Dukes	98	*	*	*	*	*	*
Grafton	Worcester	13,035	*	*	5	38	30	230
Granby	Hampshir	5,565	*	*	*	*	<5	*
Granville	Hampden	1,403	*	*	*	*	<5	*
Great Barrin	Berkshire	7,725	*	*	<5	*	*	*
Greenfield	Franklin	18,666	*	*	<5	*	12	64
Groton	Middlesex	7,511	*	*	<5	*	<5	*
Groveland	Essex	5,214	*	*	*	*	<5	*
Hadley	Hampshir	4,231	<5	*	*	*	<5	*
Halifax	Plymouth	6,526	*	*	*	*	<5	*
Hamilton	Essex	7,280	*	*	*	*	*	*
Hampden	Hampden	4,709	*	*	<5	*	<5	*
Hancock	Berkshire	628	*	*	*	*	*	*

Hanover	Plymouth	11,912	*	*	*	*	<5	*
Hanson	Plymouth	9,028	*	*	<5	*	<5	*
Hardwick	Worcester	2,385	*	*	*	*	<5	*
Harvard	Worcester	12,329	*	*	*	*	<5	*
Harwich	Barnstabl	10,275	<5	*	<5	*	*	*
Hatfield	Hampshir	3,184	*	*	*	*	*	*
Haverhill	Essex	51,418	<5	*	14	27	88	171
Hawley	Franklin	317	*	*	*	*	*	*
Heath	Franklin	716	*	*	*	*	*	*
Hingham	Plymouth	19,821	*	*	*	*	<5	*
Hinsdale	Berkshire	1,959	*	*	*	*	<5	*
Holbrook	Norfolk	11,041	*	*	*	*	<5	*
Holden	Worcester	14,628	*	*	*	*	8	55
Holland	Hampden	2,185	*	*	*	*	*	*
Holliston	Middlesex	12,926	*	*	*	*	*	*
Holyoke	Hampden	43,704	<5	*	35	80	171	391
Hopedale	Worcester	5,666	*	*	*	*	<5	*
Hopkinton	Middlesex	9,191	*	*	*	*	*	*
Hubbardsto	Worcester	2,797	*	*	*	*	<5	*
Hudson	Middlesex	17,233	*	*	*	*	6	35
Hull	Plymouth	10,466	*	*	<5	*	5	48
Huntington	Hampshir	1,987	*	*	*	*	*	*
Ipswich	Essex	11,873	*	*	*	*	<5	*
Kingston	Plymouth	9,045	*	*	<5	*	5	55
Lakeville	Plymouth	7,785	*	*	*	*	<5	*
Lancaster	Worcester	6,661	<5	*	*	*	<5	*
Lanesboro	Berkshire	3,032	*	*	*	*	*	*
Lawrence	Essex	70,207	58	83	30	43	117	167
Lee	Berkshire	5,849	*	*	*	*	*	*
Leicester	Worcester	10,191	*	*	*	*	<5	*
Lenox	Berkshire	5,069	*	*	*	*	5	99
Leominster	Worcester	38,145	<5	*	<5	*	68	178
Leverett	Franklin	1,785	*	*	*	*	*	*
Lexington	Middlesex	28,974	*	*	<5	*	9	31
Leyden	Franklin	662	*	*	*	*	*	*
Lincoln	Middlesex	7,666	*	*	*	*	*	*
Littleton	Middlesex	7,051	<5	*	*	*	<5	*
Longmeado	Hampden	15,467	*	*	*	*	6	39
Lowell	Middlesex	103,439	42	41	36	35	215	208
Ludlow	Hampden	18,820	<5	*	24	128	41	218
Lunenburg	Worcester	9,117	*	*	*	*	<5	*
Lynn	Essex	81,245	13	16	38	47	183	225
Lynnfield	Essex	11,274	*	*	*	*	*	*
Malden	Middlesex	53,884	<5	*	17	32	38	71
Manchester	Essex	5,286	*	*	*	*	*	*
Mansfield	Bristol	16,568	*	*	<5	*	<5	*
Marblehead	Essex	19,971	*	*	*	*	<5	*
Marion	Plymouth	4,496	*	*	<5	*	<5	*
Marlboro	Middlesex	31,813	<5	*	<5	*	18	57
Marshfield	Plymouth	21,531	<5	*	<5	*	8	37
Mashpee	Barnstabl	7,884	*	*	<5	*	<5	*
Mattapoissett	Plymouth	5,850	*	*	*	*	<5	*
Maynard	Middlesex	10,325	*	*	<5	*	<5	*
Medfield	Norfolk	10,531	<5	*	*	*	<5	*
Medford	Middlesex	57,407	<5	*	10	17	43	75
Medway	Norfolk	9,931	*	*	*	*	*	*
Melrose	Middlesex	28,150	*	*	5	18	17	60
Mendon	Worcester	4,010	*	*	*	*	*	*
Merrimac	Essex	5,166	*	*	*	*	<5	*
Methuen	Essex	39,990	5	13	9	23	24	60
Middleboro	Plymouth	17,867	*	*	<5	*	<5	*

Middlefield	Hampshir	392	*	*	*	*	*	*
Middleton	Essex	4,921	7	142	<5	*	<5	*
Milford	Worcester	25,355	<5	*	<5	*	11	43
Millbury	Worcester	12,228	*	*	*	*	6	49
Millis	Norfolk	7,613	<5	*	*	*	*	*
Millville	Worcester	2,236	*	*	*	*	<5	*
Milton	Norfolk	25,725	<5	*	<5	*	5	19
Monroe	Franklin	115	*	*	*	*	*	*
Monson	Hampden	7,776	*	*	*	*	<5	*
Montague	Franklin	8,316	*	*	*	*	<5	*
Monteray	Berkshire	805	*	*	*	*	*	*
Montgomer	Hampden	759	*	*	*	*	*	*
Mount Wash	Berkshire	135	*	*	*	*	*	*
Nahant	Essex	3,828	*	*	*	*	*	*
Nantucket	Nantucket	6,012	*	*	<5	*	7	116
Natick	Middlesex	30,510	*	*	*	*	8	26
Needham	Norfolk	27,557	*	*	*	*	6	*
New Ashfor	Berkshire	192	*	*	*	*	*	*
New Bedfor	Bristol	99,922	16	16	16	16	122	122
New Braintr	Worcester	881	*	*	*	*	*	*
New Marlbo	Berkshire	1,240	*	*	*	*	*	*
New Salem	Franklin	802	*	*	*	*	*	*
Newbury	Essex	5,623	*	*	<5	*	<5	*
Newburypor	Essex	16,317	*	*	*	*	6	37
Newton	Middlesex	82,585	<5	*	<5	*	38	46
Norfolk	Norfolk	9,270	*	*	*	*	<5	*
North Adam	Berkshire	16,797	*	*	*	*	<5	*
North Ando	Essex	22,792	*	*	<5	*	<5	*
North Attleb	Bristol	25,038	<5	*	<5	*	5	20
North Brook	Worcester	4,708	*	*	*	*	<5	*
North Read	Middlesex	12,002	*	*	<5	*	<5	*
Northhampto	Hampshir	29,289	*	*	6	20	9	31
Northboro	Worcester	11,929	*	*	*	*	<5	*
Northbridge	Worcester	13,371	*	*	<5	*	5	37
Northfield	Franklin	2,838	*	*	*	*	*	*
Norton	Bristol	14,265	*	*	<5	*	9	63
Norwell	Plymouth	9,279	*	*	<5	*	<5	*
Norwood	Norfolk	28,700	*	*	<5	8	5	17
Oak Bluffs	Dukes	2,804	*	*	*	*	<5	*
Oakham	Worcester	1,503	*	*	*	*	*	*
Orange	Franklin	7,312	*	*	<5	*	<5	*
Orleans	Barnstabl	5,838	*	*	*	*	<5	*
Otis	Berkshire	1,073	*	*	*	*	<5	*
Oxford	Worcester	12,588	*	*	*	*	8	64
Palmer	Hampden	12,054	*	*	<5	*	9	75
Paxton	Worcester	4,047	*	*	*	*	<5	*
Peabody	Essex	47,039	*	*	<5	*	26	55
Pelham	Hampshir	1,373	*	*	*	*	<5	*
Pembroke	Plymouth	14,544	*	*	*	*	5	34
Pepperell	Middlesex	10,098	*	*	*	*	<5	*
Peru	Berkshire	779	*	*	*	*	*	*
Petersham	Worcester	1,131	*	*	*	*	*	*
Phillipston	Worcester	1,485	*	*	*	*	<5	*
Pittsfield	Berkshire	48,622	<5	*	22	45	82	169
Plainfield	Hampshir	571	*	*	*	*	<5	*
Plainville	Norfolk	6,871	*	*	<5	*	<5	*
Plymouth	Plymouth	45,608	5	11	<5	*	28	61
Plympton	Plymouth	2,384	*	*	*	*	*	*
Princeton	Worcester	3,189	*	*	*	*	*	*
Provincetow	Barnstabl	3,561	<5	*	7	197	6	168
Quincy	Norfolk	84,985	5	6	12	14	45	53

Randolph	Norfolk	30,093	<5	*	<5	*	32	106
Raynham	Bristol	9,867	<5	*	*	*	6	61
Reading	Middlesex	22,539	*	*	<5	*	5	22
Rehoboth	Bristol	8,656	*	*	*	*	<5	*
Revere	Suffolk	42,786	<5	*	17	40	56	131
Richmond	Berkshire	1,677	*	*	*	*	<5	*
Rochester	Plymouth	3,921	*	*	*	*	*	*
Rockland	Plymouth	16,123	<5	*	<5	*	<5	*
Rockport	Essex	7,482	*	*	*	*	<5	*
Rowe	Franklin	378	*	*	*	*	*	*
Rowley	Essex	4,452	*	*	<5	*	<5	*
Royalston	Worcester	1,147	*	*	*	*	<5	*
Russell	Hampden	1,594	*	*	*	*	*	*
Rutland	Worcester	4,936	*	*	*	*	<5	*
Salem	Essex	38,091	<5	*	6	16	25	66
Salisbury	Essex	6,882	*	*	*	*	<5	*
Sandisfield	Berkshire	667	*	*	*	*	*	*
Sandwich	Barnstabl	15,489	*	*	<5	*	<5	*
Saugus	Essex	25,549	<5	*	<5	*	7	27
Savoy	Berkshire	634	*	*	*	*	*	*
Scituate	Plymouth	16,786	*	*	*	*	6	36
Seekonk	Bristol	13,046	*	*	*	*	6	46
Sharon	Norfolk	15,517	*	*	<5	*	<5	*
Sheffield	Berkshire	2,910	*	*	*	*	<5	*
Shelburne	Franklin	2,012	*	*	*	*	<5	*
Sherborn	Middlesex	3,989	*	*	*	*	*	*
Shirley	Middlesex	6,118	<5	*	*	*	<5	*
Shrewsbury	Worcester	24,146	*	*	*	*	5	21
Shutesbury	Franklin	1,561	*	*	*	*	5	320
Somerset	Bristol	17,655	*	*	<5	*	10	57
Somerville	Middlesex	76,210	9	12	11	14	69	91
South Hadle	Hampshir	16,685	*	*	<5	*	<5	*
Southampto	Hampshir	4,478	*	*	*	*	*	*
Southboro	Worcester	6,628	*	*	*	*	<5	*
Southbridge	Worcester	17,816	*	*	<5	*	12	67
Southwick	Hampden	7,667	*	*	<5	*	<5	*
Spencer	Worcester	11,645	*	*	*	*	<5	*
Springfield	Hampden	156,983	28	18	447	285	905	576
Sterling	Worcester	6,481	*	*	*	*	*	*
Stockbridge	Berkshire	2,408	*	*	*	*	*	*
Stoneham	Middlesex	22,203	*	*	<5	*	6	27
Stoughton	Norfolk	26,777	<5	*	5	19	21	78
Stow	Middlesex	5,328	*	*	*	*	*	*
Sturbridge	Worcester	7,775	*	*	*	*	<5	*
Sudbury	Middlesex	14,358	*	*	*	*	<5	*
Sunderland	Franklin	3,399	*	*	*	*	*	*
Sutton	Worcester	6,824	*	*	<5	*	<5	*
Swampscott	Essex	13,650	*	*	*	*	5	37
Swansea	Bristol	15,411	*	*	<5	*	7	45
Taunton	Bristol	49,832	<5	*	8	16	24	48
Templeton	Worcester	6,438	*	*	*	*	9	140
Tewksbury	Middlesex	27,266	<5	*	*	*	<5	*
Tisbury	Dukes	3,120	*	*	*	*	<5	*
Tolland	Hampden	289	*	*	*	*	*	*
Topsfield	Essex	5,754	*	*	*	*	<5	*
Townsend	Middlesex	8,496	*	*	*	*	<5	*
Truro	Barnstabl	1,573	<5	*	*	*	*	*
Tyngsboro	Middlesex	8,642	*	*	<5	*	5	58
Tyringham	Berkshire	369	*	*	*	*	*	*
Upton	Worcester	4,677	*	*	*	*	<5	*
Uxbridge	Worcester	10,415	*	*	*	*	<5	*
Wakefield	Middlesex	24,825	<5	*	*	*	<5	*
Wales	Hampden	1,566	*	*	*	*	<5	*
Walpole	Norfolk	20,212	*	*	<5	*	<5	*
Waltham	Middlesex	57,878	12	21	<5	*	34	59
Ware	Hampshir	9,808	*	*	<5	*	<5	*

Wareham	Plymouth	19,232	*	*	<5	*	18	94
Warren	Worcester	4,437	*	*	<5	*	<5	*
Warwick	Franklin	740	*	*	*	*	*	*
Washington	Berkshire	615	*	*	*	*	*	*
Watertown	Middlesex	33,284	<5	*	7	21	17	51
Wayland	Middlesex	11,874	*	*	<5	*	<5	*
Webster	Worcester	16,196	*	*	*	*	10	62
Wellesley	Norfolk	26,615	*	*	<5	*	14	53
Wellfleet	Barnstabl	2,493	*	*	*	*	<5	*
Wendell	Franklin	899	*	*	*	*	*	*
Wenham	Essex	4,212	*	*	*	*	*	*
West Boylst	Worcetser	6,611	6	*	*	*	*	*
West Bridge	Plymouth	6,389	*	*	<5	*	<5	*
West Brookf	Worcester	3,532	*	*	*	*	*	*
West Newbu	Essex	3,421	*	*	*	*	<5	*
West Spring	Hampden	27,537	*	*	<5	*	<5	*
West Stockb	Berkshire	1,483	*	*	*	*	*	*
West Tisbur	Dukes	1,704	*	*	*	*	*	*
Westboro	Worcester	14,133	*	*	*	*	5	35
Westfield	Hampden	38,372	<5	*	<5	*	26	68
Westford	Middlesex	16,392	*	*	*	*	7	43
Westhampto	Hampshir	1,327	*	*	*	*	*	*
Westminster	Worcetser	6,191	*	*	*	*	<5	*
Weston	Middlesex	10,200	*	*	*	*	<5	*
Westport	Bristol	13,852	*	*	*	*	<5	*
Westwood	Norfolk	12,557	*	*	*	*	<5	*
Weymouth	Norfolk	54,063	<5	*	8	15	22	41
Whatley	Franklin	1,375	*	*	*	*	*	*
Whitman	Plymouth	13,240	*	*	*	*	<5	*
Wilbraham	Hampden	12,635	*	*	<5	*	<5	*
Williamsbur	Hampshir	2,515	*	*	*	*	*	*
Williamstow	Berkshire	8,220	*	*	*	*	5	61
Wilmington	Middlesex	17,651	*	*	<5	*	<5	*
Winchendo	Worcester	8,805	*	*	*	*	5	57
Winchester	Middlesex	20,267	*	*	*	*	6	30
Windsor	Berkshire	770	*	*	*	*	*	*
Winthrop	Suffolk	18,127	<5	*	<5	*	13	72
Woburn	Middlesex	35,943	<5	*	7	19	11	31
Worcester	Worcester	169,759	26	15	38	22	367	216
Worthington	Hampshir	1,156	*	*	*	*	*	*
Wrentham	Norfolk	9,006	*	*	*	*	<5	*
Yarmouth	Barnstabl	21,174	*	*	<5	8	<5	*

